

AUTOMATIC TRANSFER SWITCHES



**TS 840 - 400 AMP
TRANSFER SWITCH**



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**THOMSON TECHNOLOGY TS 840 AUTOMATIC TRANSFER SWITCHES
OFFER THE FOLLOWING OUTSTANDING FEATURES:**

Enclosed Contact Power Switching Units

- **fully enclosed** silver alloy contacts provide **high withstand** rating & **100% continuous** current rating.
- **3 cycle short circuit current withstand** tested allows use of non-series rated upstream protection devices.
- **completely separate** utility and generator side power switching units provide superior reliability through redundancy (no common parts), as well as excellent serviceability.
- power switching units can incorporate **overcurrent protection**, allowing cost savings in upstream devices.
- **not damaged if manually switched** while in service since contacts have inherent spring over center design.

Reliable Motor-Operated Transfer Mechanism

- **heavy duty** brushless gearmotor and operating mechanism provide mechanical interlocking and extreme long life with minimal maintenance.
- **safe manual operation** permits easy operation even under adverse conditions.

Superior Serviceability

- all mechanical and control devices are **visible and readily accessible**.
- all control wires and power busses are **front-accessible** - there are no wires or connections which require removal of the transfer switch from its enclosure for servicing.

Control Features

- **TSC 80** microprocessor based controller.
- **NEMA 3R rated** enclosure for outdoor weatherproof applications
- **isolation plug** permits disconnecting control circuits from all power sources for safety and convenience.

Quality Assurance

- ISO 9001:2000 Registered

Safety Standards

- UL 1008 Automatic Transfer Switches for use in Emergency Systems
- CSA C22.2 No. 178 Automatic Transfer Switches

GENERAL DESCRIPTION

STANDARD ATS

Thomson Technology **TS 840** series of Automatic Transfer Switches employ two mechanically interlocked enclosed contact power switching units and a microprocessor based controller to automatically transfer system load to a generator supply in the event of a utility supply failure. System load is automatically re-transferred back to the utility supply following restoration of the utility power source to within normal operating limits.

TS 840 Automatic Transfer Switches are specifically designed and certified for use in emergency power system applications for light industrial, telecom and agricultural markets that require automatic standby power.

The standard **TS 840** Automatic Transfer Switch is rated for 100% system load and requires upstream overcurrent protection.

All **TS 840** series automatic transfer switch models have been 3 cycle short circuit withstand current tested in accordance with UL

1008 & CSA 22.2 No. 178 which provide high withstand current ratings and use of non-series rated upstream protective devices. All **TS 840** automatic transfer switches are supplied with NEMA 3R outdoor weatherproof enclosures as standard.

The inherent spring over center mechanism in the power switching devices allows the operator to manually operate the transfer switch without disconnecting the power source or loads.

The **TS 840** series automatic transfer switches use a type **TSC 80** microprocessor based controller which provides all necessary control functions for fully automatic operation. Refer to separate literature for additional information on the **TSC 80** transfer controller.

The standard **TS 840** series automatic transfer switch provides an open transition “break-before-make” transfer system with neutral position delay to ensure adequate voltage decay to prevent out of phase transfers.

SERVICE ENTRANCE ATS

Thomson Technology **TS 840 Service Entrance Automatic Transfer Switches** incorporate an isolating mechanism and over current protection on the utility supply thereby removing the need to have a separate, upstream circuit breaker/disconnect switch from the transfer switch. This unique **Service Entrance Rated Automatic Transfer Switch** design is incorporated into a standard sized automatic transfer switch enclosure providing a space saving, cost effective solution for most applications.

The **Service Entrance Rated ATS** feature is a standard option that can be applied to any **TS 840** model of Thomson Technology Transfer Switch.

Standard features of the **Service Entrance Rated Automatic Transfer Switch** include a NEMA 3R rated enclosure, pad-lockable Service Disconnect control switch and status indications.

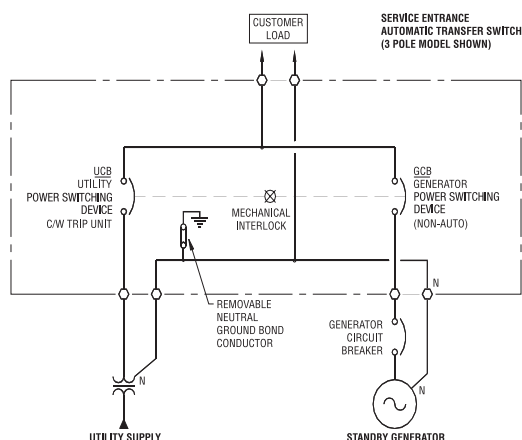
TS 840 SE Service disconnect operation is very simple and ensures a high level of safety for system maintenance personnel when performed. Normal operation and performance of the automatic transfer switch is unaffected by the Service Entrance ATS feature.

TS 840 SE Automatic Transfer Switches are specifically designed and certified to the UL 1008 Standard as well as complying with NEC and NFPA requirements. **TS 840 SE** Automatic Transfer Switches are for use in Emergency Power System applications such as commercial, industrial, or government institutions that require automatic standby power.

All **TS 840 SE** transfer switch models have been 3 cycle withstand current tested in accordance with UL 1008 & CSA 178 which allow high current ratings and use of non-series rated upstream protective devices. The **TS 840 SE** Automatic Transfer Switch is rated for the system load and requires upstream over current protection on the generator supply.

The **TS 840 SE** series transfer switches use a type **TSC 80** microprocessor based controller.

TYPICAL SINGLE LINE DIAGRAM



OPERATION MODE

| Service Entrance Automatic Transfer Switch | Utility Power Switching Device | Generator Power Switching Device | ATS Load |
|--|---|---|-----------------|
| Operation Mode | Position | Position | ATS Load |
| Normal Conditions (Utility Power Supplying Load) | Closed | Open | Energized |
| Utility Power Failure (Generator Supplying Load) | Open | Closed | Energized |
| Service Disconnect Mode | Open (Mechanically & electrically interlocked) | Open (Mechanically & electrically interlocked) | De-Energized |

WITHSTAND CURRENT RATINGS (ALL MODELS)

| BASIC MODEL | MAXIMUM VOLTAGE | RATED CURRENT (AMPS) | WITHSTAND CURRENT RATING AMPS (RMS) | | |
|----------------|-----------------|----------------------|--|---------|-------------------------------|
| | | | With Upstream Circuit Breaker Protection | | With Upstream Fuse Protection |
| | | | @240V | @ 240V | FUSE TYPE |
| TS 84xA - 0100 | 240 | 100 | 65,000 | 100,000 | T,J |
| TS 84xA - 0150 | 240 | 150 | 65,000 | 100,000 | T,J |
| TS 84xA - 0200 | 240 | 200 | 65,000 | 100,000 | T,J |
| TS 84xA - 0250 | 240 | 250 | 65,000 | 100,000 | T,J |
| TS 84xA - 0400 | 240 | 400 | 65,000 | 100,000 | T,J |
| TS 84xA - 0600 | 240 | 600 | 65,000 | 100,000 | T,J |
| TS 84xA - 0800 | 240 | 800 | 65,000 | 100,000 | Consult Factory |

ENCLOSURE DIMENSIONS/CABLE TERMINALS

(NEMA 3R, ASA 61 GRAY)

| MODEL AMPERAGE | NUMBER OF POLES | DIMENSIONS Inches (mm) ¹ | | | SHIPPING WEIGHT lbs (KG) | TERMINAL RATING ³ | |
|--------------------------|-----------------|-------------------------------------|-------------|------------|--------------------------|------------------------------|--------------------|
| | | HEIGHT | WIDTH | DEPTH | | QTY PER PHASE | RANGE ⁴ |
| 100A | 2,3,4 | 31.1 (790) | 22.3 (566) | 14.0 (356) | 143 (65) | 1 | #14 - 1/0 |
| 100A w/Dist ² | 2,3 | 43.1 (1095) | 34.3 (871) | 13.0 (330) | 233 (106) | 1 | #14 - 1/0 |
| 150A | 2,3,4 | 31.1 (790) | 22.3 (566) | 14.0 (356) | 143 (65) | 1 | #2 - 4/0 |
| 150A w/Dist ² | 2,3 | 43.1 (1095) | 34.3 (871) | 13.0 (330) | 233 (106) | 1 | #2 - 4/0 |
| 200A | 2,3,4 | 31.1 (790) | 22.3 (566) | 14.0 (356) | 143 (65) | 1 | #6 - 350 MCM |
| 200A w/Dist ² | 2,3 | 43.1 (1095) | 34.3 (871) | 13.0 (330) | 237 (108) | 1 | #6 - 350 MCM |
| 250A | 2,3,4 | 35.1 (892) | 27.3 (693) | 14.0 (356) | 172 (78) | 1 | #6 - 350 MCM |
| 250A w/Dist ² | 2,3 | 43.1 (1095) | 34.3 (871) | 13.0 (330) | 251 (114) | 1 | #6 - 350 MCM |
| 400A | 2,3 | 43.1 (1095) | 34.3 (871) | 13.0 (330) | 227 (103) | 2 | 2/0 - 500 MCM |
| 400A | 4 | 48.1 (1222) | 37.8 (960) | 14.5 (368) | 256 (116) | 2 | 2/0 - 500 MCM |
| 400A w/Dist ² | 2,3 | 63.1 (1603) | 40.8 (1036) | 14.5 (368) | 354 (161) | 2 | 2/0 - 500 MCM |
| 600A | 2,3 | 46.1 (1171) | 36.3 (922) | 14.5 (368) | 248 (113) | 2 | 2/0 - 500 MCM |
| 600A | 4 | 48.1 (1222) | 37.8 (960) | 14.5 (368) | 256 (116) | 2 | 2/0 - 500 MCM |
| 600A w/Dist ² | 2,3 | 63.1 (1603) | 40.8 (1036) | 14.5 (368) | 358 (163) | 2 | 2/0 - 500 MCM |
| 800A | 2,3 | 48.1 (1222) | 37.8 (960) | 18.0 (457) | 309 (140.4) | 3 | 2/0 - 500 MCM |
| 800A | 4 | 63.1 (1603) | 40.8 (1036) | 18.0 (457) | 367 (167) | 3 | 2/0 - 500 MCM |
| 800A w/Dist ² | 2,3 | 63.1 (1603) | 40.8 (1036) | 18.0 (457) | 422 (192) | 3 | 2/0 - 500 MCM |

¹ Enclosure dimensions are for reference. (DO NOT USE FOR CONSTRUCTION)

² Enclosures for models with Distribution Breaker Options (Dist 2 or Dist 4)

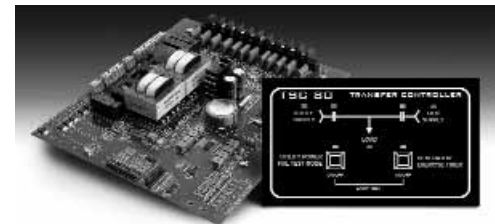
³ All cable connections suitable for copper or aluminum

⁴ Optional terminal ratings are available in some models - Consult Thomson Technology

STANDARD FEATURES

Load on Utility & Load on Generator Lights
 Utility & Generator Source Available Lights
 Three Phase Voltage Sensing on Utility & Generator Sources
 Under Frequency Sensor on Generator Source
 Engine Start Delay Timer 0-60 sec.
 Engine Cooldown Delay Timer 0-30 min.
 Engine Warm-up Timer 0-60 sec.
 Neutral Position Delay 0-60 sec.
 Utility Return Timer 0-30 min.
 Engine Start Contact (10A, 120/240VAC res. Form B)
 Exercise Timer (On or Off Load, Fixed 30 min.)
 Auxiliary Contact - Utility side (10A, 120/240VAC res. Qty 1, Form C)
 Auxiliary Contact - Generator side (10A, 120/240VAC res. Qty 1, Form C)
 Local Utility Power Fail Simulation Test Pushbutton

(With TSC 80 Controller)



Provision for Remote Load Test/Peak Shave Switch Input
 NEMA 3R Enclosure
 Solid Neutral
 Storage Temperature: -20°C to 70°C (-4° to 158°F)
 Operating Temperature: -40°C to 50°C (-40°C to 122°F)
 Humidity: 95% non-condensing, maximum

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ORDERING INFORMATION

ATS MODEL CODE

Specify the following 21 digit ATS MODEL CODE as per the features and applications described below.

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| T | S | | 8 | 4 | | | | | | | | | | | | | | | | |

1-3. SERIES

TS – TRANSFER SWITCH

4 & 5. MODEL

84 – 840 SWITCH

6. POLES

2 – 2 POLE
3 – 3 POLE

7. CONFIGURATION TYPE

A – ATS

8-11. AMPERAGE

0100
0150
0200
0250
0400
0600
0800

12. APPLICATION

A – STANDARD
B – SERVICE ENTRANCE

13. OPERATION TYPE

1 – OPEN TRANSITION

14. SAFETY STANDARD

A – UL 1008
B – CSA C22.2. No. 178

15. VOLTAGE

1Ø 3 WIRE
D – 120/240

3Ø 4 WIRE (GROUNDED NEUTRAL)

E – 120/208

G – 120/240 (DELTA)

16. CONTROLLER

1 – TSC 80

17. ENCLOSURE TYPE

D – NEMA 3R SD, ASA #61 GREY

18. UTILITY SWITCHING DEVICE

K – Molded Case Switch 100-800A

M – Molded Case Switch C/W

Ther-Mag Trip 100-200A

N – Molded Case Switch C/W

Electronic Trip 250-800A

19. GENERATOR SWITCHING DEVICE

K – Molded Case Switch 100-800A

M – Molded Case Switch C/W

Ther-Mag Trip 100-200A

N – Molded Case Switch C/W

Electronic Trip 250-800A

20. POWER CONNECTIONS

A – STANDARD

21. CONNECTION CONFIGURATION

A – STANDARD

OPTIONAL FEATURES

(Specify separately from ATS MODEL CODE when ordering)

| CODE | DESCRIPTIONS |
|--------|--|
| Dist 2 | Load Distribution Breakers (Qty 2, 200A, 2 Pole Only) |
| Dist 4 | Load Distribution Breakers (Qty 4, 200A, 2 Pole Only) |
| Dist 6 | Load Distribution Breakers (Qty 6, 200A, 2 Pole Only) |
| SDM | LCD Service Display Module - Displays TSC 80 Controller Settings and Timer Adjustments - Plug in Connector and Cable |
| TS-H1 | Enclosure Strip Heater c/w Thermostat (120VAC External Power Source Required) |
| TS-H2 | Enclosure Strip Heater c/w Thermostat (Internally Powered from ATS Load) |

NOTE: Specifications subject to change without notice.

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Z-SK-3/08-3K-TP

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